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SOME FUNCTIONAL CONDITIONS

FOLLOWING INJURY

WITH SPECIAL REFERENCE TO

T H E

WORKMEN'S COMPENSATION ACT.

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PAGE ORDER INACCURATE IN ORIGINAL

## INTRODUCTION.

During the last two years I have been fortunate in seeing many cases of accident and injury and also in studying the after effects of these accidents on the patients. In many cases these subjects of traumatism have suffered no ill effects from their accident: but others have shown distinct symptoms of nervous disorder and there has often been very great difficulty in determining whether these after effects of traumatism were due to organic disease - and by this term I mean a disease which is due to a definite lesion of the central nervous system - or merely to a derangement of function where there is no lesion so far as we know. This difficulty has led me to study these diseases very carefully, especially those which were purely functional and this study has shown me the apparent similarity between organic and functional disease, and also in some respects a neurosis after injury presents features which are not so marked when the disease arises from other sources. The distinctions are often slight and careful examination is required to discover them, but, when discovered, they afford the greatest assistance in making an accurate diagnosis.

In cases of neurosis after trauma it is essential to accurately diagnose them and be able to give a correct prognosis as to the duration of the disease; for since the introduction of the Workmen's Compensa-



tion Act practically all these cases have to be reported on either to Insurance Companies, Managers & Owners of Works, Employers of Labour etc., or these cases come into Court and evidence has to be given with regard to them as a result of the terms of Compensation not having been agreed upon between the contending parties.

Medical men are frequently being called in as witnesses or referees so an exact knowledge of these functional conditions after injury is absolutely necessary for their success in these capacities.

In considering these conditions I shall not discuss them as a whole but shall devote my attention to describing the condition as it is found to present itself after traumatism. The differential diagnosis between functional and organic disease however is such an important item but this cannot be omitted, so I shall consider it as I proceed, contrasting the symptoms <sup>between</sup> these two great classes as the symptoms of functional disease are being discussed. The aetiology of the neuroses I am dealing with will not be entered into, except in so far as it has any bearing on traumatism or where considered important, and the treatment being the same whatever the cause, whether post-traumatic or otherwise, need not be considered as it does not enter into the question under consideration.

The pathology of the functional diseases is still in a very obscure state and neither microscopical examination nor appearances after death compared with

the symptoms observed during life has helped to solve the problem to any extent, but the pathology will be entered into so far as it is known, and the reasons given as far as possible to account for any particular symptoms. I have seen altogether 143 cases of these functional disturbances after trauma, and of these the condition took the following form:

|                                    |      |
|------------------------------------|------|
| (Shock                             | 122) |
| Neurasthenia                       | 68   |
| Hysteria                           | 37   |
| Insanity                           | 5    |
| Epilepsy                           | 4    |
| Hypochondriasis                    | 26   |
| Mixed Neurasthenia and<br>Hysteria | 3    |

I have enclosed Shock in parenthesis as practically all the recipients of trauma suffered from shock to a greater or lesser extent.

Of these cases 104 were men and 39 were women, and this is what might be expected as in this country at all events, the number of men engaged in manual labour and so more liable to injury, is much greater than the number of women.

The proportion of numbers is as follows:-

|                                  | <u>Men.</u> | <u>Women.</u> |            |
|----------------------------------|-------------|---------------|------------|
| (Shock                           | 84          | 38            | 122)       |
| Neurasthenia                     | 68          | -             | 68         |
| Hysteria                         | 10          | 27            | 37         |
| Mixed Neurasthenia<br>& Hysteria |             | 3             | 3          |
| Insanity                         |             | 5             | 5          |
| Epilepsy                         | 1           | 3             | 4          |
| Hypochondriasis                  | 25          | 1             | 26         |
|                                  | <u>104</u>  | <u>39</u>     | <u>143</u> |

After treating these functional conditions the

Workmen's Compensation Act has been discussed in its relation to them and to Medical Practitioners, as there are many points of Medico-legal interest in connection with it. All these post-traumatic conditions are preceded to a certain extent by shock so a short description of shock has been given, as this subject would be incomplete without it.

## S H O C K.

After practically every form of trauma the chief complaint of the patient is that he is suffering from "shock". There is no doubt that a great deal of ignorance exists about this condition in the minds of the general public, and no subject has been so differently interpreted by medical men in the witness box. The personal equation or mental organisation of the patient, his susceptibility to suggestion, has all to be taken into account, and after injury where the patient thinks there is a fair prospect of getting compensation he thinks it is his duty both to himself and his family to make the most of his condition and the first idea which strikes him is that he is suffering from shock.

Many persons are subjected to great shock but do not present any after effects whatever, but the prospect of litigation ahead makes them develop familiar symptoms. Shock is a very general term and is often applied <sup>to</sup> so many kinds of sudden depression of the vital powers that it must not be accepted unreservedly until it has been fully analysed and also the facts of the case under consideration taken into account. It may be applied to any small injury without consequences or to the results of a blow that may kill a person.

Shock may be defined as a state which is due to a stimulus causing an exhausting or depressing



influence on the nervous system, and the stimulus is either transmitted to the vital centres in the medulla from the peripheral sensory or sympathetic nerves of an injured part or may affect them from some disturbance of the emotional centres through the nerves of special sense. There has been made a great demand upon the vital forces and the extent of shock depends mainly on the following factors:-

1. The Severity and extent of the injury.

This factor may be estimated either by the superficial damage or the depth to which the injury extends. It may be taken as a general rule that the amount of shock is proportional to the depth of the wound as greater violence is required to cause a deep wound than a superficial one, but in some cases superficial injuries cause a much greater amount of shock than deep ones, owing to the large number of nerve terminals involved along which stimuli can be carried to the centres, and this is well seen in the case of burns of the first three degrees where the injury is quite superficial but if extensive may often cause the death of a patient.

2. The Nervous Susceptibility of the Subject.

The more highly organised the nervous system is the greater is the amount of shock and vice versa. This is illustrated by the fact that coarse types of men and savage races do not suffer nearly so much from shock as people of refinement.

3. The Site of the Injury.

The more vital and important an organ is the

more closely is it connected with the sympathetic or central nervous system and so, if it be injured, the greater will be the shock.

4. Whether or not the Patient is prepared for the injury.

If the patient thinking some calamity is impending is in a state of tension affecting the whole nervous system, then the amount of shock sustained will be considerably more than if his mind is taken up with other matters when the trauma is experienced. It is noticed however that men engaged in following dangerous occupations where they are liable to injury at any time, become "acclimatized" as it were to the danger; so, if they happen to sustain an injury they do not suffer from shock to the same extent as a man not engaged in following an occupation of this sort. And again, if an accident occurs to an intoxicated person the symptoms of shock are delayed until the effects of the alcohol have passed off.

#### Symptoms.

Shock after trauma varies greatly in its extent and variety, but if present its effects are due to impaired cardiac force with cerebral anaemia in consequence and for some time an exhaustion of general nervous function. There may only be a slight transitory giddiness and faintness (known ordinarily as a fainting fit) or there may be complete prostration, insensibility, or death.

The face is cold and shrunken looking, the brow



beaded with perspiration. The pulse at first is slow and weak, later it becomes rapid and irregular, later still, imperceptible. The respirations are shallow and slow and the temperature is subnormal.

After an interval the "reaction" occurs and this is ushered in by the respirations becoming deeper and faster, the tone of the pulse improves and it becomes slower. The skin surface becomes warmer and less clammy and then consciousness returns as does muscular power and during this stage the patient may vomit and this symptom may be due to a hyperaemia of the brain following the anaemia which caused the preceding symptoms.

If the accident has caused loss of blood then the signs of haemorrhage will be present, pulse becomes frequent, large and compressible, collapses entirely between each beat and is dichrotic. This being due to the passage of a small quantity of blood through a vessel which is practically empty and altogether collapsed.

Sometimes the "reaction" is accompanied by irritability and this may be either muscular or mental. In the first case there is extreme restlessness, and in the other traumatic delirium which should always be looked upon seriously; and it is quite possible that a toxic element may be the cause or at any rate help to produce these conditions.

In many cases shock may not show any symptoms for some time after the injury has been received and then come on gradually. This is often very well marked

often in people who have been in a serious railway accident, but have received no great injury. Anxiety and excitement are present to begin with, but as these wear off their place is taken by depression and symptoms somewhat similar to those described are seen but they rather more resemble neurasthenia than real shock.

It is found that after shock has persisted for some time the specific gravity of the blood considerably increases.

Professor Sherrington showed in one of his experiments that the specific gravity of the blood rose from 1054 to 1062 which was caused by shock due to exposing the intestine of a healthy dog.

However there may be no symptoms of any moment if shock is only present in a small degree, perhaps some slight trembling or nervousness or feeling of faintness being the only signs that the patient is suffering from shock at all.

#### CASE I.

J.L. aged 57, a carter, was knocked down by the cart backing unexpectedly into him. He was not injured except for some slight bruising over the left arm. When seen about two hours after the accident he was found to be trembling violently all over, and this continued for several hours, but no other symptoms of shock were present except a transitory faintness.

#### Pathology.

The post-mortem evidence points to a loss of

control of the nervous system over the vascular, resulting in the anaemia of the brain and superficial parts of the body and an engorgement of the viscera and the splanchnic area. The heart contains practically no blood but it is probable that the right side is much distended at the time of death when due to sudden injury but subsequently empties itself by post mortem contraction.

Probably several factors are needed to produce the complex phenomena of shock although the explanation is not easy. The slow pulse and syncope is most probably caused by reflex inhibition of the heart's action through the cardio-inhibitory centre in the medulla. It is demonstrated physiologically by opening a frog's abdomen and sharply striking the intestine when the heart stops in diastole but if the vagi have been previously <sup>divided</sup> or paralysed with atropine no such effect is produced.

Any severe peripheral injury may cause the same result especially injury affecting the sympathetic centres of the abdomen which are closely connected with the vital centres in the medulla.

A severe blow in the epigastrium over the solar plexus may cause instant death as may also drinking cold water when hot.

The depression after the injury is probably due to inhibition of the vaso-motor centre in the medulla. This causes dilatation of the smaller arterioles especially in the splanchnic area and a lowering of the general blood pressure follows. The portal system is over full so the supply to the brain is

diminished.

Another factor which must be taken into account is exhaustion of the nerve centres which in consequence lose their control over the muscular and circulatory systems. If this is not so then a large haemorrhage ought to produce the symptoms of shock.

The terms 'shock' and 'collapse' are very often used synonymously but it is better to restrict the term 'collapse' to a condition resulting from a draining away of a large quantity of fluid from the body. The condition is well illustrated by diseases such as cholera and peritonitis, but in the latter disease there is the toxic element working concurrently with the removal of fluid.

Shock and Collapse may follow one another however as is seen in the case of rupture of the viscera where the injury is followed immediately by shock which is succeeded by collapse due to acute peritonitis.

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### THE NEUROSES FOLLOWING INJURY.

Neurosis after injury has been recognised for a long time by Physicians and Surgeons of almost every nationality who have given the various conditions which are found many names, these names all being synonyms for the same conditions.

Erichson in 1868 published his book on "Spinal Concussion" and after this the subject of a neurotic condition following trauma interested many men of the medical profession who began to study the various conditions. Even before Erichson's work Paget had recognised the relation of hysteria to certain vague forms of neurotic disturbance in connection with injury, but after the publication of "Spinal Concussion" writers began to take different views of the subject.

Although Tardieu in France reported many cases, he did not recognise a traumatic neurosis, while Page of London saw the similarity, or more correctly the identity of the symptoms with those of hysteria.

Oppenheim in Germany thought the condition was a new one and Charcot in France thought the affection did not differ in any way in its forms from ordinary Neurasthenia and Hysteria.

Bailey of America took a very clear view of these conditions and discussed the question fully, and he tended to emphasise their psychical etiology.

Railway spine, railway brain, spinal concussion traumatic neurosis, traumatic neurasthenia, traumatic hysteria are a few of the names which have been given

to these conditions, showing the different views that have been taken of them.

Many of the cases which present themselves for examination after trauma or indeed where no trauma has been received, but who have been present in some accident, suffer from shock alone, while others present symptoms of a hysterio-neurasthenic nature which is due to a mental rather than a physical disturbance. The chief symptom is very frequently loss of will power and this seems to be due to auto-suggestion with some fixed idea caused by a delusion of the sensory centre. Such a fixed idea comes in time to dominate the whole conduct of the subject and together with this there are indications of ill health but the objective expressions are quite out of proportion to the subjective.

This departure from mental health is due either to an accident or shock of some kind but it may also result from many other causes and the symptoms may appear almost immediately or not develop until some time afterwards as the patient may be in suitable environments and responds to them. There is a marked psychic element to contend with in these cases and proof of this is that after some accident the patient is calm and self-possessed and goes about helping others, but as soon as they no longer require his services, he collapses: and very often later develops this incapacitating neurosis. The explanation of this slow development is said by many to be due to the nervous centres being injured immediately, but that the excitement of the moment keeps the patient "going"



In some of the most obstinate cases of neurosis there has been no serious accident or no injury received; or the subject may have been in the same accident with other people but he alone is the one affected afterwards.

Cases are quoted by different writers where the patient was asleep during some accident but sustained no injury and subsequently developed a neurosis, after an interval of comparatively good health.

Factors which often have a great share in causing this condition are auto-suggestion, sympathy, and advice of friends, constant watching, the patient brooding over his health, forms of medical treatment and many others such as these, and they act by means of giving the patient some fixed idea, there being an unconscious stimulation of the mental centres, no effort afterwards being made to recover.

The symptoms of these neuroses are those of inaction and disordered cerebration which at times may very closely simulate organic disease but the symptoms of these neurotic conditions are not consistent like those of diseases of the brain and spinal cord, but speaking generally they are of shorter duration, their character is slighter and more transitory and they usually recover.

The subjects of these neuroses suffer from perverted sensations, anaesthesias, paraesthesias, loss of power, pain, affections of the sense organs and even mental abnormalities, but their symptoms are found to group themselves more or less under a definite heading and resemble some particular condition; and so these symptoms will be described under the heading of the

disease they most simulate. In many cases the symptoms of one disease seem to be mixed up with those of another, but this "mixed disease" always shows predominating features of one disease in particular and the patient suffering from these symptoms is found to be the subject of a condition similar to neurasthenia, hysteria, etc. as the case may be.

I shall now describe these neuroses under the headings they are most frequently seen to present themselves.

### NEURASTHENIA.

The term Neurasthenia was introduced by Beard of New York and means nervous exhaustion or nervous debility. It is a condition (and may be described as an irritable weakness of the central nervous system) rather than a disease, and may follow any form of exhaustion fatigue or toxaemia; and in many cases follows shock or traumatism, the trauma received being often of a trivial nature. It is met with in highly wrought, able, and overworked men and women, and the condition seems to be favoured by heredity excesses and civilization; **it is also** a condition attacking persons ill-prepared and badly organised, who succumb to some cause which would have no effect upon stable or normal individuals. This condition may appear at any time of life and no doubt even the neurosis of childhood is a form of neurasthenia. Presenile people are liable to it; while overwork arteriosclerosis, alcohol, coffee, lead, syphilis, auto-toxaemia, sexual excesses, and many other factors may cause this neurosis to manifest itself.

It is a concomitant of several diseases and is seen in conjunction with them at some period or other of their course. Examples of this are gout, diabetes nephritis and syphilis; but it is often a sequel of disease and may be found to follow cardiac disease, dilatation of the stomach, lithaemia, influenza particularly, or malaria.

So it is seen that trauma is one of many causes; and because a person has sustained a slight accident or injury the physician must not be too ready to ascribe Neurasthenia as the necessary after effect, as the condition may be the outcome of some habit or depraved bodily condition which was present at some period previous to the accident. The patient may have been alcoholic, syphilitic, or suffering from one of the many causes of the disorder; or perhaps the supposed post-traumatic affection was present before ever the accident occurred. These statements are of importance as often in medico-legal work there is a tendency to ignore the ordinary clinical features of a disease which may arise from so many causes.

#### SYMPTOMS:

The symptoms may be divided into subjective symptoms or those that the patient feels and describes, and objective or those which the physician elicits and knows to be present, but it will be found in Neurasthenia from any cause that there is always a striking lack of accordance between the symptoms of which the patient complains and the objective changes discoverable by the physician. The subjective symptoms usually are vague and take the form of a number of "ill feelings" and of these, pathological sensations and their psychic effects seem to be the most common. A peculiar headache and backache are very often present. This headache is described by the patient as "a pressure, or tightness in the head", while the backache complained of may take the form of pain along the intercostal nerves, a perpetual feeling of tiredness in the back, or there may be spots of local



tenderness on the spine. This rachialgia may be spontaneous or may only be noticed on movement or pressure. Sometimes the pain may be in the back of the neck alone.

## CASE II

J.A. age 24 a railway porter, was carrying a heavy box on his back and suddenly felt something give way. No injury was able to be discovered but there was some tenderness over the spines of the 1st. 2nd & 3rd Dorsal vertebrae. In a week he had returned to work but the following week he was again off duty on account of severe frontal headache and pain in the left side of the chest. This did not improve so the actual cautery was applied in four places to the spine in the dorsal region and four days afterwards he was discharged from the hospital quite cured.

There is always a great feeling of weakness and the patient complains of feeling tired on the least exertion, but the physical debility may reach such a pitch that the patient is confined to bed. The hands are often tremulous and the slightest exertion produces a general agitation. Very slight exertion produces an immediate and quite disproportionate amount of fatigue to the effort made. The patient gives up all his time to resting but even this is not sufficient to relieve the tiredness of the muscles especially those of the extremities.

All these symptoms are accounted for by the depressed and worried state in which the patient exists. He does not take proper food or nourishment and we therefore find a resulting pallor and a general asthenia.

The digestive system is very often deranged due most often to a functional atony, the digestive organs not having their proper nervous control and also there is often a lack of gastric secretion causing flatulent dyspepsia, but in some cases the patient eats and sleeps well in spite of actual headache and occasional flushings.

The appearance of the patient is so characteristic that the physician may gain much information if he closely observes him on entering the room. He is often untidy in his dress and appearance, looks worried, the face is drawn and anxious, and expresses inward distress. The lower facial muscles are loose and flaccid, the brow is puckered up into folds (and this may be unilateral) or it may be wrinkled all over. The whole facies presents a great mental picture of pain more than an expression of real suffering. Of this typical facies the subject is unconscious and so the expression is not controlled and is often most marked if there is an impending litigation, but after the litigation has ceased the expression becomes more peaceful and in time returns to its normal again. The patient very often is seen to hold his body loosely and when standing has to support himself against some article of furniture or says he is unable to rise on account of his weakened condition. The mental condition is always very marked and many strange symptoms may be present. The mental state is one of depression and despondency and if marked there is a striking apathy which the patient shows by the slowness and listlessness of his movements,



but to some extent these are due to a general asthenia and to a disinclination to exert himself. As Mathieu says: "it is less a symptom than a tendency to lowering of tone in the commissural union of different spheres of cerebral activity." It is really an enfeeblement of personality and the enfeeblement of movement is the most important phenomenon.

There is an inability to perform ordinary mental work such as reading or writing and patients complain that they are unable to concentrate their attention on anything. The mind is in a state of doubt so that the subject is not able to "make up his mind" on any subject, there being loss of power of fixed attention. He shows irresolution in all his actions and this can even be noticed in the manner in which he moves or walks.

He is attacked by many kinds of morbid fears which affect his responsibility and render him incompetent to exercise his judgment so that he becomes restless and worried by his inability to come to a conclusion or exercise his judgment. There may be ideas always present in the patient's mind, and these fixed ideas may dominate his conduct completely. Such ideas are often "fears" or "phobias" and may be of many forms, or may simply be a general morbid timidity. They may take the form of Agoraphobia or fear of being in an open space, when the patient feels as if he were fixed to the ground and cannot move, he breaks into perspiration and has palpitation of the heart and an anginous feeling in the chest, but if accompanied by another person he may not mind crossing any open space.

Monophobia, is the fear of being left alone, Claustrophobia the fear of being in a closed space, Anthropophobia, the fear of people, Batophobia, the fear that high things are going to fall, Pathophobia, the fear of disease, Siderodromophobia, or fear of a journey, Siderophobia or Astrophobia fear of thunder and lightning, and in some few cases there may be Pantophobia which is fear of everything and everybody.

The patient usually dreads to do anything to increase his alleged serious condition and very often visits his physician - it may be several times a day - to show him some imaginary change and to be reassured about himself.

The mood and character of the patient gradually alters and what is called the "irritable humour" appears. He complains about everything and often can talk about nothing but his sufferings, expecting everyone to have the greatest sympathy and condole with him about his sufferings. He feels very deeply hurt and offended if his least desire is not at once attended to and he has no consideration whatsoever for his nurses or attendants and may even try and make everyone about him as unhappy and uncomfortable as he pretends to be himself.

The power of attention is weakened but memory is as a rule unaffected differing in this way from hysteria and involuntary mental activity may be most troublesome. Thoughts which he cannot control rush through his head one after another but in contradistinction to this there may be marked absence of mind as the individual's attention is wholly taken up with thoughts of past deeds

words or scenes so that he is unable to associate any ideas with present external stimuli.

Insomnia is a great source of complaint and is one of the most frequent symptoms of Neurasthenia, being seen in all its different forms. Sleeplessness in these cases results from an irritable and badly nourished brain and partly because the patient is unduly susceptible to external sources of irritation. It may be the result of a fixed idea or may arise from the physical disability of the patient to take the requisite amount of exercise necessary to ensure rest at night. This want of exercise may cause a toxæmia due to waste material not being properly excreted and this is another factor to account for insomnia.

Patients no doubt have a certain amount of pain it may be real or imaginary: if real it usually takes the form of headache or backache but these are not severe enough to keep the patient awake and besides they are usually relieved by the patient being in a recumbent position. Sensory disturbances, however, may tend to interfere with rest and besides this many patients have the idea that they cannot sleep however hard they try, but if convinced that they can and will, sleep comes at once. Some patients are wakeful till the night is far advanced while others wake up early in the morning and cannot go to sleep again.

In a few cases however, neurasthenics sleep well and eat well but may be subject to flushings; but in cases of severe insomnia as a rule the appetite is poor and the patient grumbles about his food and has

a distaste for everything. The tongue may in exceptional cases become the seat of a disordered sensibility or dysaesthesia so that the patient refuses to eat, saying that he cannot take his food properly, and he starves himself, malnutrition being the result.

### CASE III.

C.R., age 36, a turner by occupation had a twist drill driven through the palm of the left hand. This injury suppurated for some time but eventually healed, some slight stiffening of the middle and ring fingers being present. The patient began to show signs of Neurasthenia. He could not sleep, could not eat, had always a pain in the back. He became morose and irritable although usually a good-tempered man and nothing his wife or family could do for him satisfied him. He was convinced that he would never be able to work again and that his hand would always be useless and so instituted proceedings for damages. The medical evidence given at the trial went to show that he could use his hand and work if the neurasthenic symptoms passed away, and damages in a lump sum were not awarded.

The patient soon began to improve after this and three months afterwards had returned to work again.

### SENSORY SYMPTOMS.

The backache (rachialgia) and the headache (cephalalgia) have been already referred to and these are seen also in other neuroses where the general nutrition is depressed. The cerebral and spinal ischaemia which is present in neurasthenia probably account for their presence. The headache which is an anaemic headache



appears in the morning and improves towards night when the patient goes to bed and gets into the recumbent position. It often becomes worse while the digestive processes are at work, is often paroxysmal, and when present the face may be flushed and the temporal arteries may pulsate, the surface of the body becoming hyperaemic. The patient complains of a bi-temporal pressure said to be like the feeling experienced when a helmet is worn, but the pain is not always confined to this region as it may be frontal, parietal or occipital. It may not be confined to the head alone but may extend into the neck and shoulders, or it may be a unilateral pain unlike megrim as there is neither the nausea and vomiting or the feeling of cold experienced in the latter complaint.

Along with this cephalalgia may be visual disturbances such as flitting spots of light or muscae volitantes, or auditory disturbances in the form of crackling or explosive noises which were first described by Searle, there may be even true hyperacusia.

The backache varies in its situation and may be a dull ache or a sharp stabbing pain and this pain may be either superficial or deep. There is often a hyperaesthesia of the skin over the vertebral spines, the patient crying out at the slightest touch, and the spines are more tender than other parts of the vertebral column. The seventh cervical spine seems to be especially affected in women. That this hyperaesthesia is not really present can be shown by directing the patient's attention to some other part of the body

while the pressure is being made. The pain complained of may be in the lumbar region and although there is a disinclination to turn and twist the body, yet there is none of that disinclination for movement seen in a case of lumbago, or in deeper seated trouble such as spinal meningitis.

Intercostal neuralgia and coccydynia are common and pains even resembling the "lightening pains" of locomotor ataxia have been described, but these pains may be found to pass away if the patient's attention be diverted from them. A number of the spots tender on pressure may be localised called Valleix's points,

Besides this hyperaesthesia which may be present in any region of the body, or in the viscera, there are usually present paraesthesiae and these are vague sensory sensations with no explanation. They take the form of numbness, tingling, formication, or a limb may feel "dead"; these perversions of sensibility being local or general, but they rarely resemble those of any other conventional kind of disease as they are superficial, irregular, and do not correspond exactly with the course or distribution of any special nerve or deep-lying organ.

#### CASE IV.

J.N., age 31, a labourer by occupation had fallen while carrying a pile of bricks and slightly sprained his left ankle. When seen two hours after the accident there was some effusion and tenderness around the ankle joint but no fracture. The patient began to walk three days afterwards but then complained



that he had no feeling in his left leg, he had lost his appetite and suffered from backache and tingling in different parts of his body. These symptoms continued for some time but eventually quite cleared up under treatment.

Peripheral sensations are often connected with pain in quite a different region of the body (and this is illustrated by the fact that eliciting the knee jerk in neurasthenics may cause intense pain in the back), and patients who have sustained a slight trauma dwell upon painful impressions which were originally connected with some slight injury, so that they become dominant fixed ideas: even an old scar, removed from any nerve may become the seat of imaginary pain, while there may be visceral pains of a neuralgic nature which are commonest in connection with the genital organs.

#### CASE V.

Mr. J. a retired manufacturer had always been in good health, but in 1902 he had several attacks of appendicitis and decided to have his appendix removed. This was done, the wound healing by first intention. Ever since however, he has complained of severe pain in the scar and around it, the pain being of a stabbing nature and sometimes so severe that he is

afraid to move as when he does the pain becomes excruciating in character. The pain is always most severe in windy weather.

A patient may be so afraid of causing himself pain by any muscular movement that he becomes absolutely helpless and this helplessness almost amounts to a paralysis; or in some the same complaint is associated with the use of an organ of special sense or with the taking of food. Loss of movement is sometimes due to a pseudo-joint affection which may be present resembling in many ways real arthritic disease.

The special senses are often disturbed and particularly vision. Neurasthenics are rarely able to read or write for any length of time and the "irritable eye" which is a nervous or neurasthenic asthenopia is a very common symptom. Binswanger believes it to be due to pathological sensations of fatigue in the ciliary muscles or the medial recti.

Many neurasthenics are hypermetropic, but as this defect is met with as a congenital defect it has not much significance. Photophobia may be present or the patient may only imagine he suffers from it.

True contraction of the visual field is not found in uncomplicated neurasthenia even although it is traumatic, but a form of contraction known as Förster's "shifting type", is present in rare cases; this depending on the susceptibility of the outer part of the visual field to fatigue, while vision in the central part remains unchanged. Disturbances of co-ordination are seen and these are liable to involve the associated movements of the eye muscles leading to asthenopic lack of accommodation. There may be ptosis of one eyelid more probably due to insufficient innervation on the part of the sympathetic than to paresis of the third nerve.

No changes in the fundus oculi other than of a functional kind are ever found, and the absence of optic neurosis or optic atrophy is a most important diagnostic fact in differentiating neurasthenia from organic disease.

The pupils show no special or constant change. They are usually dilated and the light reflex is often sluggish and although inequality has been found, it may be referred to some occupation defect or some other cause. Errors in refraction are however common. There may be hyperaesthesia of the special sense organs, but this has already been discussed.

In some patients there is marked vertigo which

may resemble that seen in Ménière's disease or it may be only a dizziness. The gait may be unsteady somewhat like that of tabes dorsalis or other organic diseases of the spinal cord and occasionally Romberg's symptom is seen. There may be disturbances of co-ordination expressed in fine movements such as writing, or articulation rather like those seen at the beginning of general paralysis of the insane.

The reflexes are usually increased, the deep reflexes being <sup>never</sup> altogether absent although in some cases they are decreased. The superficial reflexes are usually increased also. The condition of the reflexes ought to be carefully tested as their absence or exaggeration is an important point with regard to central disease, and if unilateral exaggeration is found it always ought to be looked on suspiciously, although cases have been recorded where unilateral exaggeration was present but where there was clear evidence of no spinal degeneration. Baily claims to have found ankle clonus is hysteria but it is never present in neurasthenia. The knee jerk is the deep reflex most frequently tested and the common way of doing so is to make the patient cross his legs while sitting and then tap the patellar tendon when a contraction of the quadriceps extensor is got. However it is often found that in fat people there is no response, so a better way is to make the patient sit on a high object and hang his legs over the edge. "Enforcement" may help in eliciting a reflex.

In about .002% the knee jerk is absent in normal persons.



## MOTOR SYMPTOMS.

In Neurasthenia there is never what might be called true paralysis although in certain subjects the muscular weakness is very extreme and there may be entire motor helplessness. Even in these cases which are due to the will being suspended for some time the apparent lifelessness is a functional paralysis and is curable. This symptom requires very thorough examination as it is apt to be taken as a sign of organic disease. The astasia abasia of Binswanger, the akinesia algara of Moebius, and the atremia of Nefel belong to this functional condition.

The "feeling of fatigue" which exists is connected with the emotional activity and is not in reality a physiological condition. Some emotion is often found to prostrate the subject and it is well known that severe shock may lead to complete inhibition the result being a functional paresis.

The fatigue complained of is a very constant symptom and often is an actual fact due to a muscular toxæmia caused by the general condition, but often is due to the fear of movement which prevents the thorough excretion of the body waste products, most of the cases being due to this latter cause.

Tremor is usually present in some degree but is not volitional like that seen in disseminated sclerosis or hysteria. It becomes more marked if the patient becomes worried or emotional. It is quite a gentle oscillatory tremor somewhat resembling that seen in exophthalmic goitre but the oscillations are

not so frequent. It may be mistaken for an alcoholic tremor or that of paralysis agitans but in the former the tremor is finer and worse in the morning, while in the latter the "cigarette rolling" movement between the thumb and forefinger is also seen. The tremor may involve the tongue and lips so that speech may be difficult and may lead the physician to think the subject is suffering from organic disease.

#### CIRCULATORY SYMPTOMS.

There is often acceleration of the pulse sometimes to a remarkable degree, the acceleration increasing if the patient becomes excited. The arterial tension becomes lowered owing to the relaxation of the peripheral arterioles, and the pulse may be irregular and intermittent or aortic throbbing may be apparent, almost like that seen in aortic regurgitation, while the pulsation of the abdominal aorta may be so forcible in the epigastrium as to suggest the presence of aneurism.

Vaso motor disturbances consist not only of obstinate flushings of the surface especially of the head, but there may be spots of cutaneous hyperaemia or peripheral coldness and lividity. Profuse general or local sweating may occur and this may be experienced at night time alone.

A capillary pulse can sometimes be seen in the nails, lips, or in the edges of a line drawn down the forehead dermatographia may be demonstrated. In inactive cases cyanosis which is seen in spinal disease may be found, especially if there is rigidity present also. Rare cases may have haematemesis for which

there is no apparent causation, but this symptom is sometimes simulated.

#### CASE VI

R.L. aged 23 years, a young labourer with good family history, going home from work one day slipped on the road and sustained a Pott's fracture of the left leg; the fracture united in about five weeks time and he was discharged from hospital as cured. He returned a month afterwards complaining of backache, headache, constipation, insomnia and said he had vomited blood. He was again admitted to hospital and very thoroughly examined, but no organic disease could be discovered although he had a very slight haematemesis one evening. He was treated as a neurasthenic when his symptoms disappeared and there was no recurrence of the haematemesis

Some patients and women especially may have the opposite symptoms owing to the peripheral arterioles being contracted. In these the face is pinched looking, the nose often blue and the extremities are cold, but these patients obtain great relief from vasodilator drugs, wearing heavy clothing and taking diffusible stimulants.

#### DIGESTIVE SYMPTOMS.

The so-called "nervous dyspepsia" is a very common sequel of traumatism, and it may be brought about by the state of the patient's mind, or by the digestive organs being insufficiently innervated.

The symptoms are gastro-intestinal the organs being in an atonic condition, digestion is slow, and



in consequence there is flatulence, vomiting, epigastric pain, colic and acid eructations. The appetite is poor, the percentage of Hydrochloric Acid in the gastric juice is usually diminished. There is an intestinal autotoxaemia which is manifested by the amount of indican excreted, diarrhoea of an irritative nature or constipation due to the torpid condition of the large intestine.

#### CASE VII

Dr. H.R., a Volunteer officer was manoeuvring one day with his corps and turning suddenly, his right leg gave way under him and he suffered severe pain in the knee. He suffered with this knee for nearly a year all this time his digestion being so disturbed that even the simplest food disagreed with him. At the end of ten months, as the knee was no better, it was diagnosed that he had displaced his right internal semilunar cartilage and this displacement was reduced under ether. After this the digestive trouble quite disappeared and no recurrence has taken place since.

#### URINARY SYMPTOMS.

In all forms of neurasthenia the condition of the urine is important as many cases are complicated by "lithaemia" which may be very marked so much so that this form has been termed lithaemic neurasthenia - by polyuria, and by excess of phosphates, of oxalates, and urates. The proportion of uric acid to urea as stated by Dana instead of being from 1 to 45 or 1 to 60



as in health, may be reduced to 1 to 30 or 1 to 40.

The urine may contain traces of sugar but never contains albumin except as a result of some other disease.

#### CASE VIII

J.A. aged 47, a coachman by occupation was driving one day in a dog cart, when the horse ran away and he was thrown out of the dog-cart and landed on the road without sustaining severe damage except some slight bruising to the right side of the body and arm. He vomited about an hour after the accident and perspired profusely. Next day he had a hyperaesthesia of both arms body and legs and severe pain in the back and abdomen and he vomited 5 times that day and suffered severely from nausea. He only passed urine once in 24 hours and then six ounces. For the next fortnight the urine was very irregularly passed sometimes only six ounces in the 24 hours and sometimes as much as 90 ounces but no disproportion of the solid constituents of the urine was discovered. These symptoms passed away in the course of about six weeks.

#### SEXUAL SYMPTOMS.

There is often an irritable weakness of the sexual as of other organs showing its presence by nocturnal emissions, depression after intercourse, spermatorrhoea or nervous impotence. After micturition or defaecation there may be seminal discharges, and impotence is occasionally met with due entirely to nervous fears, while sexual perversion has been found in a few cases. The "tender ovary" and the "painful testicle" are very often found in neurasthenics whilst in females

dysmenorrhoea is met with. After shock the menses may be suspended for some time and in neurasthenia following trauma there may be great irregularity of menstruation.

### Blood in Neurasthenia.

It is usually stated that the haemoglobin is not diminished but in 88% of the cases I have examined I have found it to be markedly so, the number of red corpuscles being decreased also. The number of red corpuscles taking an average in 54 cases was 4,240,000 the percentage of haemoglobin being 78.

### DIAGNOSIS.

In no part of clinical medicine is a careful and thorough examination and weighing of symptoms more urgently called for than in neurasthenia, as in many cases the diagnosis is most difficult. It resembles hypochondriasis and hysteria on the one hand and organic disease of the nervous system on the other, and a diagnosis can only be correct when there is general debility of the nervous system in connection with local disturbances no matter how severe they are. The disease has to be almost completely diagnosed from the facts given by the patient and from his behaviour as seen by the physician, but a careful physical examination is most essential in order to eliminate the possibility of organic disease being present, a most important point especially in those cases which follow trauma.

Hysteria is often diagnosed in women when neurasthenia is really the condition present but unless the patient presents marked hysterical signs such as paroxysms this diagnosis should not be made.

In hypochondriasis the patient has delusions about his condition and as Osler remarks he differs from the "neurasthenic" in the excessive psychic distortion of "the pathological sensations to which he is subject".

The organic diseases for which neurasthenia is most likely to be mistaken are General Paralysis and Locomotor Ataxia but it should be easy to distinguish between them if the physical signs are carefully gone over. In tabes the sensory disturbances, loss of reflexes, and the changes in the fundus oculi will give the diagnosis.

The onset of general paralysis in many cases may resemble neurasthenia and the grave nature of the malady may be quite overlooked or neurasthenia may be mistaken for general paralysis. Severe psychic exhaustion alone is not enough to warrant a diagnosis of G.P.I. but this along with a history of syphilis, alcohol, or morphinism, together with intellectual defects, sluggish pupils, paresis of the facial muscles or those of articulation show what the condition really is.

#### PROGNOSIS.

The prognosis in traumatic Neurasthenia cannot be said to be as good as that in neurasthenia due to other causes, but the majority of patients recover, provided that the psychopathic inherited state of the patient is not too deeply seated. It is often noticed that after a claim for damages has been settled, or a lawsuit ended the patient begins to improve at once but traumatic neurasthenia must be admitted to be rather an intractable disease. In some cases in



which the symptoms are decidedly profound and apparently resemble those of organic disease there is often a complete disappearance of all symptoms and a return to the ordinary normal condition in even a few years.

The prognosis is better in simple neurasthenia than in hysteria and isolation and discipline if they can be carried out often lead to a rapid recovery, but many cases are hard to manage and improvement is slow. If there are combined injuries the prognosis may be bad. The mental state of his surroundings plays a great part in the rapidity of the patient's recovery, and a well nursed patient in genial surroundings stands a much better chance of complete recovery than one left alone by himself with no-one to advise him or bring into play any mental stimulus.

The time of recovery cannot be definitely fixed as the disease is so much affected by psychic influences and other dominating factors.

If neurasthenics develop a secondary sclerosis, through inaction which is perhaps kept up for years, a fatal termination may occur through inanition.

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## HYSTERIA

Hysteria as defined by Mosby is "a state in which ideas control the body and produce morbid changes in its functions".

This neurosis is found in all classes and of all ages, it being most prevalent in women; it is by no means uncommon in men, and even children may develop it.

Heredity is thought to play an important part, as does the strenuousness of the present day life and the condition, like neurasthenia, is frequently seen to follow trauma either in its lesser or severer forms. However it is common to find neurasthenia and hysteria together after an accident, or the condition of the patient may be one of general ill-health with an added hysteria.

Fraenkel divides hysteria into three clinical groups which are as follows:-

1. Predominantly mental forms, hysterical psychoses with more or less pronounced somatic symptoms.
2. Predominantly cerebro-spinal forms, e.g., hemiplegias, contractures, tremors.
3. Predominantly splanchnic forms e.g., vomiting, diarrhoea.

The form of hysteria following traumatism is manifested most often by symptoms coming under the first two divisions, those of the first being commonest; while cases showing symptoms of the third division are

much rarer.

There may be a condition of ill-health prior to the trauma or before the hysterical condition asserts itself; but this does not necessarily follow as hysteria is a condition which may develop without any premonition, appear quite suddenly, and as promptly disappear again. It is a purely functional condition - at any rate for some time - but if the disease persists then organic changes may result. The suddenness of this state and its variability suggest the fact of its being a functional condition, which is probably due to a nutritional disturbance and so far as we can tell not to any organic lesion.

#### SENSORY SYMPTOMS.

Of all the physical symptoms of hysteria disturbances of sensation are the most constant and are of a nature quite characteristic of hysteria. When seen in the traumatic variety these are usually so well marked as to enable us to differentiate this affection from one arising from an organic lesion. These parasthesiae are somewhat pathognomonic and they may be in islets of skin not corresponding to any peripheral nerve distribution or to that of blood vessels, they do not conform to any spinal distribution, nor are they segmental or embryonic in character. The limitations of the affected skin areas are sharply defined. The anaesthesiae in hysteria of the traumatic type is usually of three kinds: that of touch, that of painful impressions and that of insensibility to heat and cold. There may also be loss of the stereognostic sense (the power of distinguishing the form of an object in

association with its weight), or there may be an increased susceptibility to tactile impressions and to pain impressions.

Analgesia or insensibility to painful impressions may occur in three forms:

1. As a hemi-anaesthesia involving one half of the body the anaesthesia stopping short at the middle line.
2. Irregularly distributed spots or zones.
3. The "gauntlet" form, where a hand, foot, or whole extremity is affected, the dividing line between the anaesthetic and sensitive skin being sharply defined.

Hemi-anaesthesia is the commonest form and occurs most frequently on the left side of the body, may come on slowly or may follow a convulsive attack. The skin on the affected side is usually cold and pale and it may be noticed that a slight pin-prick draws blood.

Disease of the internal capsule may also cause this peculiar symptom, so that care is required in diagnosing whether the hemianaesthesia is due to a deep seated lesion or not, especially in the case of a person who has received a trauma but presented symptoms of central disease previously.

Anaesthetic spots or zones may involve the mucous membranes as well as the skin. They may be transferred from one part to another by metallotherapy, thus demonstrating the fact that they are not the manifestation of any local or deep disease.

#### CASE IX

M.C., a domestic servant aged 27, when coming

downstairs slipped and fell knocking her head against one of the steps with violence sufficient to make her feel faint and giddy for a few minutes. The same night she developed the idea that she was becoming insane, she had irregularly distributed spots of anaesthesia over the abdomen, and in the mouth on the mucous membrane of the left cheek was a spot about the size of a shilling which the patient said was quite "dead" and which was anaesthetic.

She felt so weak that she was not able to stand and this continued for about 10 days and then she developed aphonia. All these symptoms departed under the influence of electricity and milk isolation treatment.

The organs of special sense may be involved in this loss of function and chief among them are the limitation of the field of vision and colour blindness. There may be concentric limitation of one or both eyes as a rule the loss being greatest on that side presenting the body anaesthesia; central vision may be quite acute however, while that of the peripheral field is diminished or absent. Absolute hysterical blindness is rare and if present may disappear rapidly.

The loss of colour sense is most commonly seen on the same side as the body anaesthesia. The usual order of disappearance of the colours I have found to be violet, green, red, orange, yellow and last of all, blue; violet is most easily lost red and blue are most persistent except where there is absolute achromatopsia, the patient seeing nothing but black and white. Colour vision may be restored by the



application of metals, and it is often found that the particular metal suitable to each individual has to be found - gold being suitable in one case while lead is the only metal having any power in another.

#### CASE X.

R.L. aged 24, a dressmaker was cycling and lost control of her machine and ran into a wall, but escaped with the exception of a cut over the right supraorbital ridge and considerable bruising on the left leg and thigh. She became very excitable that night and was in quite a hysterical condition next day and during the next week well marked symptoms of hysteria developed. She recovered sufficiently to return to her work in about 7 weeks but then found that she saw things double and that she had great difficulty in distinguishing colours. Her colour sense gradually disappeared being unable to differentiate between violet, green, red, orange, yellow. However under a continued course of electricity this sense returned.

Deafness may occur in hysteria being due to an anaesthesia of the auditory apparatus, particularly so of the external auditory meatus and tympanum. Of course there is no bone or organic disease present.

Loss of taste and loss of smell may be present but are uncommon symptoms of the condition following trauma. If these are present they may be due to a lesion in the region of the gyrus uncinatus or to a toxæmia such as tobacco or alcohol or to some local affection of the mucous membrane all which factors ought to be eliminated before the condition is

ascribed to hysteria.

Hyperaesthesia is much more frequently seen in the form of spots or zones than in the other forms of anaesthesia mentioned. The hyperaesthetic areas may adjoin or be closely approximate to the anaesthetic areas. If these hysterogenetic spots which chiefly exist over the skin of the abdomen and thorax, are pressed other signs of hysteria may be seen to develop. There is frequently a hysterogenetic spot over the region of the ovary, pressure here bringing on a marked paroxysm or even an epileptoid attack or in other instances, pressure in this region may terminate such an attack. In nearly all forms of hysteria there is the complaint of an intense pain in the back which may be diffuse or limited to certain spinous processes; there may be pain in the abdomen resembling gastralgia or even the gastric crisis of tabes dorsalis, or if in the iliac region may be mistaken for an attack of appendicitis.

Intense pain in the head (the clavus hystericus) often in the region of the sagittal suture is common, and as its name indicates is described by the patient as like the agonising feeling which would be caused if a nail were driven into the head. This hyperaesthesia in compensation cases is often attributed to quite harmless scars or depressions following some small accidental wound.

Sensations of heat and cold may be affected but their unilateral character is an indication of their true nature. If this symptom is present symptoms of organic disease ought to be carefully looked for as

thermo-anaesthesia is more often a prominent feature of syringo-myelia.

In the same way as the special senses may be anaesthetic they may be hyperaesthetic, the powers of smell or hearing becoming very acute so that the patient can distinguish high notes of a Galton's whistle which are inaudible to others, or an odour not disagreeable to the healthy individual may produce great discomfort in the hysterical subject.

#### CASE XI.

Miss C.M., aged 24, sustained a slight injury to the hand while pulling the cork out of a bottle. This cut gave her pain for some time but although she presented no other symptoms of hysteria she complained that she constantly felt a disgusting smell, which was most unpleasant no cause being found to account for it. She developed a cough of an unexplosive nature for which there was no explanation except that it was hysterical in origin. On being treated on this assumption with valerian both these symptoms quite disappeared.

Aphonia and Mutism may immediately succeed some shock or may slowly develop after an accident. They may yield to suggestion or may reappear after some new mental impression is received.

In these cases of disorders of special sense one must be careful in distinguishing between functional loss of power, organic disease and the simulation of the malingerer.



### MOTOR SYMPTOMS.

There is always found a great muscular weakness, the patient being unable to do any form of work or to perform the functions of ordinary life without feeling tired and exhausted. This weakness may be shown by some unexpected loss of power such as letting some object fall to the ground or the patient collapsing

This state may be quite temporary or it may go on to a complete paralysis, which may simulate any type of organic paralysis. It is usually confined to the voluntary muscles principally those of the extremities, but yet this paralysis may involve the involuntary muscles of the viscera, particularly that of the intestine.

Paralysis may take the form of a paraplegia, hemiplegia or monoplegia, paraplegia in the hysterotraumatic form being the commonest and most frequently occurring on the left side; but a single muscle or group of muscles only may be affected. Although these paralysees always resemble paralysis due to a lesion of the brain or spinal cord there is not the involvement of the facial muscles that is found when those organs are affected, and the left side of the body is most frequently affected. As has already been pointed out the facial muscles are not paralysed but a form of cramp may affect them on one side and produce a distortion which the observer must be aware of when examining a patient so as not to mistake this for paralysis.

The paralysis of one extremity is often apt to



be mistaken for one due to a peripheral neuritis or to some form causing nerve degeneration, but in a hysterical paralysis there is a seemingly much greater helplessness than in true organic paralysis such as a hemi-plegia of central origin; and in the former the muscles do not act, simply because the patient does not allow them to do so. All forms of hysterical paralysis are characterised by their flaccidity and by the apparently profound loss of power, because in true organic paralysis the patient is often able to make slight movements after a short time.

The patient suffering from a functional paralysis of a limb trying to walk is seen to give the impression that the limb is of great weight; its limpness is apparent and the foot is dragged along, and scrapes the ground. This is quite different from the gait of a cerebral palsy where the leg and foot are swung round the toe only touching the ground. In the paraplegic form the feet are kept closely together and dragged along.

#### CASE XII.

H.M. aged 27 was badly burnt a year ago when following her occupation of laundry maid. Her right leg became contracted and bent at the knee soon afterwards but the patient refused to see a medical man till she was seen by me. She was put on Weir-Mitchell treatment and electricity and quite recovered the use of the limb in five weeks time.

A functional hemiplegia and one of organic origin may be distinguished by Babinski's test. This

consists in making the patient lie on his back with his arms folded in front; he is told to rise into a sitting position his arms remaining folded. If the paralysis is organic the affected limb will be flexed at the thigh, extended at the knee and raised; while if functional the affected limb remains flaccid and parallel with the other. If a functional hemiplegia follows trauma to the head, the paralysis will be found to be on the same side as the injury and not on the other as would be the case if the cause were a cerebral lesion.

Along with paralysis there may be atrophy of the muscles but this is an atrophy of disuse and one not due to any destruction of the cells of the anterior columns of the cord, and there is no reaction of degeneration present found when electricity is applied to the limb.

A peculiar phenomenon sometimes seen in hysteria is that a patient is unable to walk or stand but when lying down he can easily move his limbs in quite an energetic manner; or he may be able to raise his arms quite freely but cannot perform any delicate acts such as writing.

#### Contractures & Spasms.

Contractures are often due to inaction the limb being kept in a fixed position for a long time and if occurring in connection with paralysis there may be shortening and deformity after the paralysis has been cured. Some of these contractures are entirely due to the mental frame of mind of the patient, but

sometimes a very minor injury such as a bruise or strain may cause a contracture or spasm of an extremity which may last for a considerable time, or may suddenly disappear as the result of some suggestion or second shock. The contractures of dis-use may resemble those seen in central organic disease, combined sclerosis after hysteria, myotonia or prolonged decubitus; if they involve the fingers or toes they resemble the "main en griffe" found in progressive muscular atrophy or in disease of the ulna nerve. There is no true atrophy, these contractures are associated with the sensory symptoms of hysteria generally.

Contracture of the hand or digits takes place after very slight trauma, which is quite insufficient in itself to produce a neuritis; organic contracture, or tissue changes. The articulations and ligaments are not affected, there is perfect freedom of movement at the wrist, the contracture becomes less during sleep and disappears when the patient is under the influence of an anaesthetic, and both the extensor and the flexor groups of muscles are involved.

Contracture of the leg and foot may suggest a poliomyelitis( a talipes equino-varus being present) but there is no atrophy of the muscles as seen in poliomyelitis.

Where there is a hysterical hemiplegia or paraplegia there may be spasmodic contractures and associated with these may be a contraction of groups of muscles such as those at the back of the neck but this is usually a temporary condition, seen

also as a phenomenon of a general hysterical state where muscular weakness figures prominently. Another phenomenon sometimes present is a condition of tonic spasm, seen when the patient makes any voluntary effort, and this condition may be a very chronic one, so much so that it may lead the examiner to believe at first that the patient is suffering from either Thomsen's or Parkinson's disease. Every form of contracture may be present as a symptom of hysteria,

As a result of trauma groups of muscles may become the seat of twitchings or spasms, as may a single muscle or even groups of muscular fibres, and a tremor either fine or coarse is found differing from that of traumatic neurasthenia as in the latter there is a general tremulousness. The presence of this tremor if marked may suggest the presence of disseminated sclerosis especially as trauma is said to be a factor in the causation of the latter disease; but it is hardly a volitional tremor though it varies in intensity and becomes more marked under the influence of emotion or on exertion; it may resemble the tremor of metallic toxæmia especially that of lead or mercury.

There is a general unsteadiness of the body which is also seen in neurasthenia, the patient swaying about when standing, his limbs tending to give way under him.

#### REFLEXES.

The superficial reflexes may not be able to be got if the anaesthesia is very marked. The deeper reflexes are often exaggerated, but may be decreased



or absent thus enabling us in many cases to differentiate this affection from a central lesion showing hemi- or paraplegic symptoms where there is always an exaggerated knee jerk.

### MENTAL SYMPTOMS.

As hysteria may be termed a temporary sensori-motor disturbance with a psychosis the mental symptoms are numerous and variable. There is a peculiar emotional and moral instability, the morals being perverted, lying being indulged in often without any cause. The patient shows a lack of judgment and is vacillating; the emotions are not under proper control, tears or laughter may be indulged in for the same reason. The will power is weakened and hysterical subjects often are not able to carry on their ordinary avocations or in some cases even to answer questions. Capriciousness, irritability and sentimentality are fully displayed and charges may be made against others without any foundation and of so shallow a nature that they ought to see the certainty of detection which they do not. The intellect is dull, so much so indeed that hysterical patients are not conscious of their loss of sensation. Memory is apt to be deficient and may be completely lost about certain things, but this latter if stated by the patient, ought to be open to doubt as there may only be simulation; however phantasms or hallucinations of memory may be present. The mental symptoms of hysteria are seen vividly expressed in mental epidemics such as are initiated by "revivalism" or by "oures" at shrines.

The mental symptoms may be said to be the result of the disintegration of the personality.

#### RESPIRATORY SYMPTOMS.

Respiratory troubles are rarely seen in the traumatic form of hysteria. If the neurasthenic element is present as well there may be decided acceleration in the number of respirations per minute. There may be a great disproportion between the action of the abdominal and thoracic muscles during respiration. A disturbance of the respiratory rhythm is sometimes seen, a deeper breath being taken at every fifth or sixth inhalation, or there may be intermittent gasping. What is known as the syndrome of Briquet consists of shortness of breath, suppression of the voice and paralysis of the diaphragm. Hysterical cries or cough may be observed particularly so in young girls, but there may be complete aphonia and even a haemoptysis may be observed, the sputum being a pale red fluid which on setting shows a brown sediment, all of which may lead the practitioner astray in diagnosing a pulmonary tuberculosis.

#### CASE XIII

H.C. aged 27, was operated on for femoral hernia and progressed satisfactorily for 4 days. There had been no history of hysteria but on the 5th night she had an attack of breathlessness and loss of voice. An embolism was suspected but she had no pain in the chest. However the attack passed off, the voice returned and the patient made an uninterrupted recovery.

### DIGESTIVE SYMPTOMS.

Disturbed or depraved appetite, dyspepsia, gastralgia are all common symptoms; Vomiting without nausea is a very common complaint, the vomiting sometimes coming on before the food has reached the stomach. The anorexia nervosa described first by Sir William Gull is a most uncommon phenomenon in hysteria after trauma, although there is often a great loss of appetite and even a repulsion for many kinds of food. After shock intestinal disturbances may be seen, such as constipation, tympanitis, vomiting which may be faecal in character, or contain blood.

### CARDIAC SYMPTOMS.

Rapid action of the heart with or without palpitation on the slightest exertion or excitement may cause great distress as may pain of an anginous character. Flushings and sweatings are also common, and rarely there may be seen haemorrhages in the skin.

### JOINT AFFECTIONS.

Some very remarkable symptoms in connection with joints were first noticed by Brodie and Paget. After some slight injury the joint - frequently the knee or hip - becomes swollen, fixed and tender with often the local temperature increased; it is

very sensitive to the touch and any movement causes great pain. If the condition lasts for any length of time the muscles about the joint waste and in consequence the joint itself looks larger, and this functional condition may in time become the seat of organic trouble. Intermittent hydrarthrosis may be a peculiar manifestation of hysteria.

#### URINARY SYMPTOMS;

Hysterical suppression of urine is much more frequently seen in females than in males, but there may be polyuria for a time. The urine does not show quantitative or qualitative changes except in the hystero-epileptic form where there is a reduction in the quantity of urea and phosphates excreted and the urine is reduced in amount. This is an important feature in differentiating hystero-epilepsy from true epilepsy, for in the latter after a fit there is always an increase in the solid constituents of the urine.

#### DIAGNOSIS.

The irregularity and eccentricity of the symptoms, their irregular mode of development and variability ought to make the diagnosis a simple matter, but sometimes it is difficult to decide whether or not



there is any organic disease present, especially disseminated sclerosis, which in its early stages is very liable to be mistaken for hysteria. Symptoms such as optic atrophy, nystagmus, presence of the Babinski sign ought to make us take a grave view of the case and incline us to consider one of organic origin.

### PROGNOSIS.

The prognosis of hysteria of the post traumatic variety does not seem to be as favourable as in those cases arising from other causes; the continued excitement kept up by litigation, tardy application of the proper therapeutics, or in some cases the frustration of the latter by relatives who wish the patient to appear as ill as possible for the benefit of the court or the medical examiners, all tend to make the disease become firmly implanted and difficult to eradicate. In giving a prognosis in this disease conventional prognosis ought to be disregarded and all the factors of the particular case and its variations from the routine disease taken into consideration.

All cases of post traumatic hysteria recover in time, the recovery taking longer if the condition is more or less due to some viciousness or bad habit on the part of the patient. If there is mixed neurasthenia and hysteria the condition may be a permanent one, as it may be also if there is central organic disease with a predominating hysterical element.

Hysteria does not shorten life unless some complicating condition is present, but of course starvation and exhaustion may ensue in patients refusing to touch food; or there may be spasm or paralysis of any part of the respiratory mechanism, inanition due to hysterical anorexia, or uncontrollable vomiting all having a fatal termination, but these cases are so uncommon as hardly to be worthy of notice. The danger of regarding this functional disease too seriously must however be guarded against, and all care must be taken not to frighten the patient, as this only causes perpetual mental dread and increases the duration of the condition, as well as making his life a misery to him, which hysteria always does in no small degree.

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TRAUMATIC FUNCTIONAL INSANITY.

Practically every form of insanity has been ascribed to trauma but this factor nevertheless is the direct cause of a very small percentage of the cases seen, and in most of these there is found to be a hereditary predisposition. But in a few cases insanity does result as a sequel to trauma where there is no predisposition and where the victim has not been the subject of injury to the cranium with resulting damage to the brain or its membranes. The patient afflicted with this psychosis will be found to have suffered either severely from shock where however there is no history of any damage to the brain or resulting coarse disease, to have been the subject of neurasthenia or hysteria or a hypochondriasis which has developed into a hypochondriacal melancholia.

Functional insanity is in reality more a symptom than a disease or rather the more marked expression of change of mental state seen in some other condition. It is a state opposed to sanity and is a state where the standard of mental health differs from that of the normal individual and according to the lessening of conformity with rational ideas and behaviour so is the degree of insanity estimated. A man may have peculiar tastes and habits or advancing a little he may be eccentric, but eccentricity carried to too great a pitch is pronounced to be insanity.

All the symptoms of madness may be present in

disordered conditions of health brought on by worry as for example in the worry caused by a case of litigation but these symptoms are transitory and may pass away after the termination and pecuniary settlement of the case.

As the term denotes there is no pathology of functional insanity but taking insanity as a whole we find no morbid changes present if we except the lesions found in general paralysis of the insane and forms of dementia, neurotic changes in acute delirium, and a deficiency in the development of the brain in imbecility and idiotcy. The state is due to a defective or disordered cerebral innervation or in the event of shock to the dendritic processes of the neurones being temporarily disturbed, but where no lesion can be discovered we must conclude that no morbid state of the brain underlies mental derangement, but that the latter is functional and not due to structural or organic disease.

The higher nerve structures are exceedingly delicate and are readily excited and inhibited and are in a condition of very sensitive equilibrium which is shown by the disturbances of muscular action seen so often in acute insanity. Parts of the cortical areas of the brain are known to be either sensory or motor but besides this there is the kinaesthetic area which is concerned with the intellectual processes and this area is the most highly specialized and developed area and so is most disturbed by adverse stress.

Mental reaction depends chiefly upon the character of the different stimuli sent to the cortex



cerebri by the various sense organs, and the most highly organised senses - - do not seem to be so frequently affected in insanity as those senses which are intellectual such as sight or hearing. Touch which is the most general of the senses is less intellectual than sight or hearing but is however the sense most often affected in that form of insanity associated with hysteria.

Illusions, hallucinations and delusions are the most common phenomena seen in mental disease of this type, and the two former may be temporary in their duration and the subject of them may be quite free from them for a time, pointing to the cause being functional. Cases are seen where these mental perversions do not remain constant as the subjects may become quite free from them and remain so for a time or mental unsoundness showing its presence by loss of memory of the accident may be completely recovered from. Illusions and hallucinations are not far distant from delusions which are ideas conceived upon false sensory impressions. In their early stages delusions are most often functional in origin although in time they may be accompanied by organic changes. It is the consequence of delusions rather than their cause which makes them pathological. Some exciting stimulus acting on a group of neurones in the brain cortex causes what might be termed an intercellular tetanus and gives rise to a succession of ideas. When these excitations are transferred to motor fibres the play of ideas becomes associated with muscular

action; whereas in health there is a state of equilibrium between the groups of cortical neurones, the spinal centres are also controlled and the muscles are kept in a healthy tone. Any nutritional disturbance of the neurones causes an explosion of nerve force followed by exhaustion and this condition is very often found in these functional diseases.

Functional insanity is very often associated with neurasthenia and hysteria but still there may be no definite neurasthenic or hysterical psychosis.

Shock following trauma may produce an altered state of mental health purely through its psychical manifestations, which shows itself as a general mental weakness. The attack may be ushered in by a rise of temperature, delirium, or sleepiness and then as well as the psychasthenia there may be complete loss of memory but if this occurs it is also due most likely to a structural organic change. This loss of memory is also seen in some cases after epilepsy. Restlessness, hallucinations, and delusions are the prominent symptoms.

A form of melancholia hypochondriacal in its nature may succeed the receipt of an injury and it is preceded by neurasthenia, hypochondria or simply depression, but the evolution of this psychosis bears a direct relation to the accident itself. The causes of the patients morbid fears are always in his mind such as the excitement through which he has passed and the incidents of the accident.

Shock may be the exciting cause of acute dementia but the patients will be found to have a tendency

to the degenerative mental derangements. This form of disease shows stupor and confusion resembling the lethargy of melancholia, but delusions or hallucinations are not present. The patient does not fall into a state of decline like the condition seen in melancholia. The patient is excessively dull, makes no voluntary movement, is cold and appears worse than he really is because recovery may take place in a short time unless the patient develops some other attack which may have nothing to do with the accident but which results from his mental instability.

The effect of a trauma on an elderly person suffering from atheroma may be a senile dementia as may an apathetic condition in connection with hysteria.

The subjects who succumb to insanity after trauma are those of an unstable mental state, and even a trivial injury or shock would favour a breakdown just in the same way as overwork or worry would; and it is more than likely that these persons have suffered from insanity prior to the accident.

#### CASE XIV

J.R. a girl of 19 was knocked down by a cyclist in June 1909 and although she sustained no injury the cyclist was stunned and his face badly cut. She suffered severely from shock and on reaching home seemed to be quite demoralised and was constantly referring to the accident. She grew nervous and very timid and could not sleep at night and she began to imagine she was being watched and that people were always in the room with her. Her excitement increased to such

an extent that she had to be watched but at times she was morose and no answer could be got from her. She later showed well marked delusions and hallucinations and imagined she was about to give birth to a child which was to be the result of her immorality, although she was a strictly moral young woman. At other times she was excited and anxious and declared she was going to die, on account of this delusion of self degradation. Before her accident she had always been a strong, healthy girl and there was no family history of insanity. Although her delusions disappeared her nature changed and she became dull and moody and had delusive ideas.

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## EPILEPSY & HYSTERO-EPILEPSY.

Epilepsy may follow an injury to the head where there was no wound or evidence of injury to the skull or its contents, but the question is still open to doubt as to whether the trauma is only the exciting factor and that some dormant disease such as syphilis may be awakened and give rise to the attacks. Most of the cases of Epilepsy seen are of the "idiopathic" variety in which heredity plays an important part as children of parents suffering from insanity, hysteria, toxaemia, e.g. syphilis, and alcohol seem to be most frequent subjects of this disease.

Reflex causes are responsible for many cases and it is often found in children that if adenoids are removed or a circumcision performed the attacks cease. Still there are cases in which a reflex cause may be present the patient not suffering from epilepsy, but if in addition trauma is added to the reflex cause, fits may ensue. Shock may be one of the exciting causes of this psychosis just as it is of neurasthenia or hysteria and just as shock causes an altered state of cell equilibrium so may epilepsy be said to be symptomatic of the same state.

Epilepsy may follow trauma when injury to the head has ensued. The continuous pressure of a piece of depressed bone on the brain or meninges, cortical irritation caused by inflammation, a cicatrix from a wound or laceration of the cranial contents may all cause the disease, but in cases following violence to the head no injury may be discovered as is proved where surgical procedure is resorted to and yet the factor of operating

has had a beneficial effect.

So we must conclude that epilepsy is a functional condition like very many forms of insanity but the mental state in the former is unlike insanity for those who suffer from it are not under the sway of delusions but suffer more from sensori-disturbances. It has been said that the mental state of epilepsy is half way between hysteria and true insanity. The sensori motor disturbances are present as are those of consciousness the latter during a fit being in abeyance yet there are no definitely ascertained lesions to be discovered.

Irritative and destructive lesions of the cortex are responsible for Jacksonian epilepsy which may also follow trauma, but here again the lesion may have been dormant, trauma being only the exciting cause.

It is possible that the crushing of a nerve or severe injury to an organ in close connection with nerve centres might bring on epilepsy, but although Brown-Segard has demonstrated that crushing the sciatic nerve in animals has brought on convulsions, so far in man this has not been demonstrated clinically. Epileptic seizures may occur in old people without any cause and these may be made the basis of a claim for compensation after some slight trauma.

The symptoms and varieties of epilepsy are too familiar to be described in detail but the after-effects are of interest in connection with the question of compensation.

Post epileptic automatism may occur and a claim for damages may be made on the strength of this if the patient has received some injury. He may lose all

memory, forget his home, relations, occupation, will wander about and may remain in this state for an indefinite time or until another fit brings back recollection.

A gradual mental impairment may follow in a certain number of cases of epilepsy, so that in time the patient has to be placed under restraint. About 8% of all cases of certified insanity are due to Epilepsy.

### HYSTERO-EPILEPSY.

This may greatly resemble Epilepsy in its aspects the convulsions being quite as violent as those seen in epilepsy, but it is classed with hysteria as the attendant circumstances are characteristic of this disease, and is due to the same causes as have been described in connection with hysteria. It occurs most often in females but may also be seen in boys and men and there is usually a history of some antecedent moral shock. This disease is much more frequently seen on the continent than in this country, particularly so in France.

The epileptoid attacks are ushered in by an aura taking the form of palpitation choking, malaise, but is not like the typical aura of true epilepsy. The onset in the former is gradual, unlike epilepsy which is sudden, so that the patient often places herself in safety before the fit begins. The patient becomes pallid and she falls, bites anything she can get hold of, becomes rigid or struggles, talks and the fit lasts for some little time. In true epilepsy there may be a scream at the onset of the fit, there is

rigid spasm followed by jerking spasm, only the tongue is bitten, the patient does not talk and the fit is over in a few minutes although the comatose condition may last for some time afterwards.

After a fit of hystero-epilepsy there may be delusions of sight or smell or a temporary inability to empty the bladder or swallow food. Sensory disturbances are concomitants in hystero-epileptics - there is often pain in one or other iliac region, more often in the left which may only be discovered on pressure being made. The seat of this pain is often the ovary and pressure here may bring on a fit but sometimes during an attack energetic pressure may stop one. The removal of the ovaries in certain cases has been found to cause a cessation of the fits altogether; anaesthesia, analgesia, or any of the sensory phenomena described in hysteria may be present.

The medica-legal aspects of this disease are the same as those described under hysteria.

### HYPOCHONDRIASIS

This is a functional disease characterised by introspection, exaggeration and the formation of subjective delusions. It very frequently exists in a mild form after trauma, the patient having a morbid anxiety about his health <sup>and a morbid</sup> magnification of his symptoms. He does not wish to deceive his physician, but he



imagines he is the subject of an illness which does not exist. Worry of any kind, certain diseases such as Gout, digestive troubles, are all apt to cause this disorder. The patient has a profound feeling of illness, and thinks he is the subject of some disease over which he broods and exaggerates so that his feelings give rise to a morbidly conscious state. He can turn his attention to nothing but his condition and thinks every small ache or pain in the predominating symptom of some grave disease he has heard about. In men very often their supposed trouble has reference to sexual matters such as impotence, or to the dread of syphilis in one who has exposed himself to the risk but who has shown no symptoms whatsoever. All the functions complained of to the physician appear to be healthy physiologically. This condition may last for years but there may be intervals of improvement. Insanity of the melancholic type may supervene but the patient has no tendency to suicide and has not delusions.

This condition is diagnosed by the absence of any serious disease, the manner of the patient and the nature of his complaints. Any disease present will not account for the intensity of the patient's symptoms. This condition is often the cause of a patient claiming heavy damages after some trivial injury. He is unfit for work, is in a state of mental perturbation and cannot apply his mind to anything so that life is a burden to him. It is a condition fraught with serious consequences in the case of a working man who has to support himself and his family, but the condition has to be recognised by an examiner as an

employer of labour or an insurance Company cannot be expected to pay damages for disease which does not exist. The patient does not try to deceive as the malingerer does. He firmly believes in his condition and that he has good grounds for getting heavy compensation and not being able to be persuaded that his case is one of those which must be settled for a small sum, he commences a law-suit usually ending disastrously for himself.

#### CASE XV.

C.N. aged 42 a plumber by occupation fell off a ladder a few feet from the ground and afterwards had pain in the right groin although no injury could be discovered. He began to imagine that he was becoming impotent and consulted his medical adviser on this subject as often as three times a day sometimes on account of his having discovered some new symptom as he thought. He claimed heavy damages from his employer and the case was taken into court but was decided against him. Soon after this he married and has quite got over these ideas.

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Since the introduction of the Workmen's Compensation Act the amount of medica-legal work has very materially increased and whatever branch of the medical profession a man has taken up, he is almost bound to come in contact with cases claiming compensation for an injury received or for some disease which is said to follow the injury. He may have to act as referee under the Workmen's Compensation Act, a certifying Surgeon under the Factories Acts, an ordinary medical witness or an expert witness in disputed cases taken into court, as the family physician giving advice to the injured party or as the medical officer of an Insurance Company having to report on cases and giving an account of the injury or disease following, a prognosis, the time the patient will be incapacitated from his work and often a suggestion as to how the insurance company are to settle the claim. Any medical man may have to examine a patient after accident, and these are much the most common cases coming under the Act, as the latter states: "Where a workman has given notice of an accident he shall if so required by the employer submit himself for examination by a duly qualified medical practitioner....." (Schedule 1 (4) and "Any workman receiving weekly payments under this Act shall ..... submit himself for examination by a duly qualified medical practitioner"....

An expert witness will not only have to give his views about the case and this implies that he must have a thorough knowledge and experience of disease

and particularly of the disease on which he is being examined, but his opinions may be subjected to searching criticism both by counsel for the opposite party and by other medical men. Indirectly the Act has brought more work to medical practitioners as many Insurance companies require that the men in large works shall be medically examined before being engaged, as the risk to the Company of insuring men not physically sound is too great, for unsound workmen are more liable to injury.

Section 1 (1) of the Workmen's Compensation Act 1906 states "If in any employment personal injury by "accident arising out of, and in the course of, the "employment is caused to a workman, his employer shall "be liable to pay compensation....."

Every employer of labour in consequence of this Act and in order to protect himself, insures his employees against accident, and for compensation after the accident for so long as the employee may be unable to resume work. Before paying this compensation the Insurance Company requires a full medical report about the case and if not satisfied will refuse to pay damages and the case may then be decided by arbitration or be taken into a court of law. Many of these cases ignore the simpler forms of settlement and arbitration and go to law in preference. A medical man will have to give evidence or act as medical referee and to perform this office properly and make a just settlement he must have a thorough medical knowledge of injury and of the conditions liable to follow an injury. It is often a most difficult matter deciding



when a man is insured against the results of accidents and becomes the subject of some post-traumatic condition, whether it is fair or unfair for him to receive the benefits of his insurance and every point of the case must be taken into consideration and the pros and cons carefully weighed before a decision can be arrived at. The question always arises as to whether the injury received was done at the time and place specified or whether the disease which is said to follow the injury really was the result of the accident or the result of the fact that the law provides that the workman's employers shall compensate him for illness produced by accident. A man may die from some illness after an accident and the question has to be asked whether this illness was caused by the accident or some quite independent cause; and whether the Insurance Company which restricts its policy to the direct result of accident shall have to pay damages. One medical man may say that the disease is due to accident, while another may take quite an opposite view. This may seem strange, but it must be remembered that it is sometimes almost impossible to estimate which of the many possible causes of disease is the dominant one in a particular case, and even though two Medical men differ in opinion on such a matter, it does not mean that one of them is accommodating his opinion for purposes of sale as has been hinted at by more than one opposing Counsel.

The great question in all these cases for com-

pensation after injury is whether or how far the traumatic element has anything to do with the disease. It is sometimes a very hard question to answer whether a disease from which a man is suffering or <sup>which he</sup> ~~from~~ has died <sup>has</sup> arises from some specific ailment or not, although it is quite easy in most cases to say whether the patient has a disease or has not, and when the medical examiner has satisfied himself that there is disease present he must next ascertain whether the disease is organic, functional, or a combination of both and then from careful eliciting of the history and symptoms make up his mind as to whether the trauma was the cause of the present condition or had nothing to do with it.

A medical man practising his profession publicly holds himself properly equipped for its due performance and he undertakes that he is possessed of the necessary and customary skill pertaining to his profession. The qualified man is an expert and he puts himself in the wrong legally, by negligent or incompetent treatment. The subjects of disease following trauma are very apt to accuse their physician of incompetent treatment and may sue him for malpraxis or if not doing this are very likely to change their doctor so it is most necessary to have an intimate knowledge of these diseases after accident and to show that one is acquainted with them and to treat them in a proper and efficient manner. If this is not done a law suit may follow when all details of treatment and diagnosis will be made public and the doctor in attendance subjected to severe criticism on all these points.

The degree of skill demanded by law is such as may be expected with regard to time and place from an average person in the profession but what constitutes a reasonable degree of skill cannot be defined and may be a question of fact to be determined by a jury in the light of the circumstances attendant on each case.

With regard to the compensation Act the first question to be answered is what is meant by personal injury by accident. Personal injury is held to mean any physiological derangement and has been so extended as to include nervous shock giving rise to physical consequences apart from gross personal lesions, but the courts have interpreted the phrase in many different ways for the purposes of the Act.

Accident may be defined as an unexpected mishap or unforeseen event which is not expected or designed. If the injury is not self inflicted or caused by design it comes within the meaning of the word "accident" for the purposes of the Act. The diseases or conditions which follow accident and injury and which come under the phrase "personal injury by accident" have to be differentiated from idiopathic disease which means a disease which is primary and not symptomatic of, or consecutive to any other disease, and this is not included in the phrase nor was it intended to be so. The diseases the Act is meant to include are diseases induced solely by an accident and set up as the result of the accident and not from any other cause whatsoever. Certain diseases such as erysipelas or tetanus may follow injury of so trivial a nature that it has not

been noticed but these come within the term accident causing injury as the injury shows itself by a morbid change in the structure of the body and this is a disease. Certain diseases frequently contracted by workmen in the course of their occupation are definitely mentioned in the Act of 1906 and so no litigation takes place but it is over the diseases following injury which are not specified that the question of compensation arises and so frequently ends in the Law Courts.

In the functional diseases it is much more difficult to say if they were due solely to accident or if they were pre-existent to the accident, or caused by some other factor such as alcohol, syphilis, or other toxins, and this has to be clearly made out as if not caused by the accident they do not come within the meaning of the Act in the phrase "personal injury by accident". It is only natural that a person finding that he is suffering from some disease after trauma ascribes it as being directly due to the accident and wishes to get compensation; but the employers and insurance companies have to be considered in the matter and it is a question for the physician to decide whether the disease is due to traumatism or to some other cause and he must not take for granted any statement the patient tells him. Perhaps the most frequent of all diseases which the patient thinks to be due to some trauma is hernia and its popular name of rupture suggests to the patient at once that it is due to a traumatic cause. Most medical men now believe that



inguinal and femoral hernias at all events are due to the presence of a congenital sac and the trauma and strain must then be looked upon as causing the descent of intestine or omentum into this already formed sac. On account of the many interpretations of the word "accident" by the Courts, hernia is considered to be due to an accident and is considered as an accident. As hernia incapacitates from work, it is only right that the patient should receive compensation. The hernia however may have existed before any accident occurred and symptoms such as a large hernia filling up the scrotum being irreducible, the external ring admitting three or four fingers, and the inguinal canal and abdominal muscles lax, point to an old-standing condition and then the patient's statement that it occurred subsequently to the accident should be looked upon with suspicion.

A patient suffering from disease after trauma may refuse to be treated as his physician wishes, compensation going on meanwhile as the patient is incapacitated from work, but the arbitrator on an application for review may order the payments to cease. The employer is not entitled to insist on the workman submitting to any treatment that may be suggested by a medical practitioner, but the Court may decide that if the treatment is simple and not likely to endanger life (such as a severe operation might do) and that benefit would without doubt result from it, then compensation shall be stopped if the patient is not willing to submit to this treatment. A patient receiving compensation after an injury is very often unwilling

to submit to treatment which a man not receiving compensation would most readily welcome as being the means of enabling him to return to his employment again but the man receiving compensation and probably also an allowance per week from some club or benefit society finds he is almost as well off and leading a much more comfortable existence than when he was at work and receiving his full wage.

In advising a patient ~~as~~ on the treatment necessary to restore him to health the case ought to be considered quite apart from the question of compensation and advice given him as to the form of treatment he ought to undergo which will most readily cure him, or rather cause him to regain his health without unnecessary risk to life or limb. If advice is given him with the idea of fitting him for work quickly by some dangerous form of treatment say a serious operation and things did not go quite right, as for example, the patient might either be crippled or lose a limb in consequence, then either the employer or the Medical men who performed or recommended the operation would be liable to damages.

In many cases the Act is much abused, for the time taken to recover from injuries, or disease following injury (or to be more accurate the time the patient affirms the disease takes to run its course), is very much longer in the case of patients coming under the Act than those who do not do so. In the former case the patients say they are disabled for months perhaps while in the latter, cases suffering from the same complaint may only take a few weeks at the most to recover. Many factors are to be taken into account

as the cause of this dishonesty, and the wording of the Act itself may account for it to a small extent. In Cl. 1 (2) the Act reads:- "The employer shall not be liable under this Act in respect of any injury which does not disable the workman for a period of at least one week from earning full wages at the work at which he was employed." And Schedule 1 - "if the incapacity lasts less than two weeks no compensation shall be payable in respect of the first week."

Schedule 1 (1). reads:- The amount of compensation under this Act shall be .....not exceeding fifty per cent of his average weekly earnings."

And again, Schedule 1. (1). "A workman who is under 21 years and whose average weekly earnings are less than 20/- 100% shall be substituted for 50 % of his weekly earnings ..... the weekly payment shall in no case exceed ten shillings." In these cases an injured man can claim half his weekly wages from his employer and in many cases derives benefit from a club or society paying anything up to the full weekly wage, or in some cases even more. It is no wonder that a workman does not wish to return to work sooner than he can possibly help. Many lawyers whom these patients consult advise them to settle their case for a sum of money to be paid in a lump sum, and not to return to work but to institute legal proceedings for the settlement of the claim and this always takes some little time. This appeal to go to law often falls in with the wishes of the plaintiff, and the recital of his story of woe in Court brings satisfaction as does the sharing of his trouble with others.

The excitement caused by the prospect of a "trial"



and the expectation of a favourable verdict, or by the various forms of disappointment which may be felt, all tend to produce in the patient a state of psychosis unfitting him for work but when the verdict has been given and the claim has been settled this all disappears although in a few instances the mental mischief done may give rise to a permanent condition of ill-health.

The Workmen's Compensation Act has not by any means benefited all workmen and has been the means of throwing not a few out of employment. Old men in particular suffer, as many employers will not engage any workmen over a certain age, e.g. 55 years, even though the man be in good health; as he is considered to run more risk at his employment than a younger one would; and many men are discharged by firms when they reach a certain age for the same reason although they may be perfectly able to follow their occupation and do good work.

Employers of labour, in trades where the men run a risk of injury or death, ~~and in some cases~~ feel bound not to employ men who are not physically fit as it follows that the risks they run are so very much greater. For example, a man with organic heart disease will not be employed as a painter, carpenter or in any other occupation where the workman has to climb ladders or to work at a height above the ground, as the man is liable to faint at any time and fall sustaining injury or death, for which compensation has to be paid either to himself or his relatives.

Many companies now keep fewer hands than previously



or have lowered wages, as insurance companies have raised their rates of insuring men, and employers cannot afford to pay more of these heavy premiums than are absolutely necessary.

Men suffering from some abnormality however, trifling are liable to be refused employment as this abnormality might become complicated as the result of an accident and give rise to a claim for compensation. In other cases if a man might be cured by operation or treatment and refuses to undergo this, he is refused employment or his papers are endorsed with a note to the effect that he is suffering from a certain affection, to avoid any claim being made at a future date for this complaint, which he might declare was due to his employment.

A medical man acting in a medico-legal capacity either as witness, referee or in the writing of reports with regard to compensation, or in the treatment of patients who will claim compensation for their injuries, must consider every detail and elucidate every fact likely to have any bearing on the case, and everything communicated by the patient and discovered by the examiner should be written down at the time of examination, as this statement at an after date may be invaluable, and at any rate it is necessary to safeguard the practitioner himself.

The merest scratch although nothing is thought of it at the time, may be the means of causing tetanus or erysipelas to set in and perhaps proving fatal, a result with which the defendant has little to do, but

which nevertheless may cause an action for malpraxis in which the Court decides that he bears the responsibility of the fatality; or if micro-organisms produce disease by entrance into some small wound which was overlooked, it may be held by the Courts that the injury and disease are both elements of damage in actions for negligence. Again, the primary injury may be slight, yet the recipient may die of some disease inherited from another generation: or may succumb to some microbic infection introduced into the body some time after the accident.

It is therefore most important to recognise the pre-existence of disease which contributes to the patient's disablement, the chance of a hereditary complication which may give the trauma quite a different complexion, the presence of secondary or induced disease incapacitating the individual, and the consideration whether the indisposition complained of might not be non-traumatic under other circumstances.

A practitioner may take too light a view of one trauma or its results, and too severe a view of another but the correct knowledge has to be gained by close observation and long experience.

All these points have to be taken into consideration besides the patient's present state to enable us to form an opinion as to what the patient's future condition is to be - a most important point in these medico-legal cases and one influencing to a great extent the amount or rate of compensation to be paid by the defendant who may be responsible only for some trifling shock or injury and not for the present con-

dition which may be almost entirely due to some previous bad habit or congenital weakness; and more especially enabling the examiner to form a prognosis as to when the patient will be fit to return to work or whether he will be permanently disabled.

In the examination of these cases likely to come under the Compensation Act the Medical man must show judgment in the summing up of symptoms, giving a wide berth to theoretical conventions, and make his decision entirely by the facts presented by each individual case, particularly with respect to the traumatic neuroses, as these present such curious variations, no two cases being in the same state or presenting quite the same features; and some other cause might have developed the condition had there been no accident. The examination of a patient who has been the recipient of traumatism has to be most thorough and his statements received with caution, as in his altered psychic state quite an honest man may become morally changed, make false representations about his symptoms, mix up falsehood and truth together, or be merely suffering from hypochondriasis having suffered nothing but slight shock as the result of his accident. The efforts of employers and Insurance companies to protect themselves are looked up as nothing short of cruelty and the patient feels no hesitation in relating a pitiable tale of woe to his medical examiner and tries to work on his feelings for the best advantage to himself. Friends and relatives make suggestions and give advice, and tend to foster any slight neurasthenic tendency there may be, encouraging the patient in his



tale of deception with no other reason than to extort the greatest possible amount of damages. Some of these claimants may be honest to begin with, but their minds become degenerate so that latterly they come to disregard all truth.

The false statements they make are often not deliberate and are made from an actual belief in their alleged condition, their judgment being enfeebled and their personality changed so that allowance must be made for the patient not sticking to the whole truth. I have already dwelt on the possibility of the claimants present state being due to the existence of some pre-disposing disease, but it may be due also to the mode of life he leads and this he will take the greatest care to conceal and the truth may only be discovered by the help of disinterested friends or neighbours. An indulgence in alcohol at some remote date may be sufficient to cause a complete breakdown after a shock which would not have affected any ordinary healthy man, and the excessive use of tobacco continued for many years may be the means of completely upsetting a man's system. We cannot be too careful about investigating these points and also in gathering as much outside information as possible concerning the life of the claimant previous to the accident as they are important factors in helping us to get to the bottom of a case.

The case of the real malingerer may present the examiner with many difficulties, but as a rule they are apt to easily fall into some small trap set for them and so are detected. The symptoms do not as a



rule coincide with those of any definite disease and show an element of inconsistency in their mode or time of appearance; or the patient may try and make some old injury or pre-existing disease do duty for the results of the alleged accident; or, the accident, if it has occurred may be of such a trivial nature as to show no after effects.

The malingerer feigns every form of symptom, pain being perhaps the commonest; but it can always be found out if this is really present by making simple tests when the patient's attention is distracted from the examiner. There are always a number of subjective complaints of a vague nature which are not able to stand any test, but symptoms may be so ingeniously presented, the claimant perhaps having read or been coached about them, that they tend to deceive an examiner although he usually makes some fatal mistake which shows up the true nature of the malady at once.

The mode and time of development of symptoms as compared with the mode and development of real symptoms of disease, their incongruity especially, usually warn the examiner that the patient is malingering, but still it is most essential to make proper tests before coming to a conclusion as to the claimant's genuineness or otherwise.

Tremor, paralysis, contractures, pain and especially hyperaesthesia, anaesthesia, pronounced reflexes insanity, ocular defects, derangements of speech, deafness, epileptiform attacks are all symptoms put forward by malingerers as evidences of the result of some injury, but they may all be detected if feigned

by the lack of the usual concomitants which would be present were the cases those of genuine disease.

It will not be out of place to describe these conditions as depicted by malingerers and their mode of recognition as such.

Tremor: - Tremor is seen as a symptom of many diseases and is most frequently a concomitant of disease as seen, for example, in exophthalmic goitre or neurasthenia in connection with other symptoms, so if presented by itself it ought to be looked upon with suspicion. It may be present of course in old age or as the result of excitement but if due to these the cause is self evident. Alcohol and excessive smoking may cause tremor and persons possessing these habits may manifest the tremor as being a resultant of traumatism. If the tremor is feigned it will be seen to lack the rhythm found in real disease, the rhythm will be constantly changing, and the movements cannot be maintained for any length of time. If genuine the tremor is made more apparent by increasing the leverage at which the affected muscles work, e.g., tremor of the upper limb is brought out by getting the patient to extend his arms in front of him. The patient does not know this and the tremor may become less or so much exaggerated as to show its dubious nature.

After severe shock the only manifestation may be a general tremulousness but this will occur only if the shock has been genuine and if this is so can be found out by outside information as to the nature of

the accident which has occurred.

Paralysis: The concomitants of paralysis are quite consistent, a fact which the malingerer is not aware of. The paralysed limb shows trophic changes, the skin is dry and glazed, the limb is cold, the muscles atrophied. In a malingerer these associated symptoms will not be present, he will hold the limb stiff and rigidly extended instead of allowing it to fall as soon as the physician lets go of it, the paralysis very seldom being flaccid and when the patient is off his guard he will perform actions in which the paralysed muscles take part. In a hemiplegia the paralysed leg is seen to be circumducted, the toes drop and anaesthesia is present and the hemiplegia is preceded by other symptoms such as aphasia, there will be facial paralysis as well and the tongue will be protruded towards the paralysed side and the paralysis will be on the opposite side of the body if caused by a head injury. The paralysis may be due to hysteria but this can be recognised by the associated symptoms and the peculiarity of the anaesthesia which has already been gone into.

If the simulation is watched it will be noticed that there is variation in the loss of power if the malingerer is repeatedly told to move the paralysed limb, the sustained effort not being able to be kept up for any length of time.

Contractures: The subject assuming this condition if caught off his guard is most likely to resume his ordinary position. The contracture takes the form of some distortion of a limb, the subject putting the

limb into a position for which there is no pathological explanation; no other symptoms of organic disease can be discovered which by their presence might account for this simulation. No reaction of degeneration can be elicited which would be present if the condition were due to a peripheral paralysis, at any rate to one of some duration, and if due to a descending neuritis it would be accompanied by increased reflexes and shortening of the limb which latter the patient is not able to assume, and these contractures do not disappear if the patient be rendered unconscious.

An old osteo-arthritis condition may be presented by the patient with the statement that it has followed a recent trauma, but here again there will be shortening of the tendons, atrophy of the muscles from disuse and changes in the bones themselves.

The condition of hysterical contracture has already been dealt with.

Pain:- This perhaps is the most common of all deceptions practised by the malingerer, and pain of almost every kind is complained of by him. The usual description he gives of it is: "a dull aching pain which gives him no rest either night or day but is always there". This description alone should put the examiner on his guard as there are few forms of pain which are not alleviated at some time or other. The pain if superficial does not correspond to the distribution of any sensory nerve or, if deep, with the situation of an organ, and the hyperalgesia which the patients pretends is present is very much more severe



when its site is touched than the examiner has cause to suspect it ought to be. The expression of the patient is not one which indicates constant severe pain and his physical condition does not show signs of the exhaustion which one might expect. The pain may be diverted in some patients from one place to another by simple suggestion. The reality of the pain must be estimated by our knowledge of its causation effects, its association with other symptoms of disease and its effect upon the condition of the would-be sufferer.

Maunkopff's test to determine whether severe local pain is real or pretended may be mentioned. The examiner makes pressure on the tender spot and the pain so produced if real causes an acceleration of the pulse of from 15 to 20 beats per minute, the test being made if possible without the patient's knowledge as excitement might cause the same pulse acceleration.

#### CASE XVI.

L.R., a turner by occupation aged 38, was carrying part of an engine when he slipped and fell and slightly strained his back. He was medically attended and was recommended to stay away from work for a fortnight. At the end of this time he complained of an intense pain on moving, in the region of the umbilicus. This pain did not seem to abate and continued for about three months at the end of which time compensation was stopped. He raised a lawsuit and had to be examined by two medical men who suspected him of malingering. He was told that it was thought he had a certain disease and if so when his umbilicus was pressed on, his left

leg and thigh would be lifted up and the thigh flexed on the abdomen. His umbilicus was then gently pressed when after a few moments he began to raise his leg and ultimately flexed his thigh on his abdomen. Naturally his case in Court went against him and the man has quite recovered and returned to work again.

Anaesthesia: This is occasionally simulated by an imposter, but if the insensitiveness is not real the patient soon betrays himself. A strong electric shock passed through him, a sudden prick with a needle when he is unprepared for it, or the application of a test tube of boiling water are more than he can stand without showing any signs of pain. Repeated tests made to define the anaesthetic area show that its margin varies in position, as if there is no anaesthesia the subject cannot give answers which are constant, and does not know the correspondence between the limit of feeling that should exist with relation to definite areas of nerve supply.

The examiner ought to be familiar with the peculiar hysterical variations which have already been described but if the case is one of hysteria other symptoms of this disease will be present

Reflexes: Patients have been described who tried to simulate exaggerated or loss of knee jerk, although they are unable to control superficial or deep reflexes. The patient may have been coached and so "kick" before the ligamentum patellae is struck, or he may allow an interval to elapse between the receipt of the stroke

made and the voluntary contraction of the quadriceps extensor.

If he tries to restrain his knee jerk the voluntary contraction of the flexors can be seen. If however the deep reflexes cannot be evoked the examiner may take it that the patient is not malingering.

Insanity: This is one of the least common "symptoms" seen in patients trying to feign disease, but one meets with such cases occasionally. The common idea of insanity is that given of being "possessed of a devil" which shows itself by shouting and screaming writhing and going into contortions. The malingerer is apt to overdo this performance and intently watches the examiner to see that his performance is being appreciated, and he will break down if subjected to too close an inquisition.

There are none of the well known and what might be described as harmonious indications of real mental disease. Any suggested symptom is at once put into practice, the conduct will be expressed by wide variations, total loss of memory is claimed but this is carried to such an extent as to make it evident that it is unreal. There is too much method in the madness of the malingerer.

Ocular Defects: Very often the patient is practising fraud will complain of some old injury to the eye and ascribe this to a recent traumatism. An old injury is usually apparent showing signs of old inflammation and changes in the lens or fundus, while a recent

injury will show signs of an inflammation or wound. Shortsightedness or ocular defects congenital or otherwise can be easily recognised by the use of the ophthalmoscope and the usual tests.

The patient's complaint however is usually a trivial one - his eyes get tired easily or he sees things double or objects become blurred. He may maintain that he is blind in one eye, and this can be verified by reflecting light into the 'sound' eye when if the pupil of the 'blind' eye contracts, the malingering element becomes apparent.

Hysterical blindness can be detected with the perimeter, and exists along with other symptoms of that disease. Word blindness as the result of central organic disease must not be overlooked, as the examiner may think the patient is trying to malingering when he can distinguish objects but cannot printed or written words. This wordblindness is often combined with word deafness and a history will be got from the patient showing the true nature of this condition.

Speech: Disturbances of speech are not often initiated by malingerers as the task is too difficult, but one patient I saw tried to imitate the staccato speech of his brother who was suffering from disseminated sclerosis. Aphonia resulting from hysteria must be diagnosed and to confirm this the application of electricity will often elucidate the truth.

Aphasia might be present as the result of an accident or disease, but if this is so there will be word blindness or word deafness as well; when if the



condition arises from organic disease other concomitant symptoms will soon show us the cause of the disorder, and in all these cases a careful examination of the heart and pulse is necessary.

Deafness: There should be no difficulty in detecting this symptom if it is pretended. There is no evidence of any local disease and an unexpected noise or question will often make the patient start or answer. A binaural stethoscope may be used, the tube going to the sound ear being plugged without the patient's knowledge and then if he hears scratches made on the metal chest piece it is almost certain that he is trying to deceive, or again the examiner may begin to talk to the patient in a loud voice and then gradually lower his voice without the patient noticing it, watching to see how much is heard by the patient.

Epilepsy: Although many subjects of trauma affirm that they are the victims of epilepsy it is a very difficult matter to really see them during a fit; and most of these cases are fictitious. Old epileptics usually present marks of their disease such as the existence of old tongue marks, vasomotor changes, facies, and very often mental dulness. Prisoners at one time used to have fits, and put soap in their mouths to form froth, in order to escape hard work, but this is a thing of the past and even if it were done now it would be easily detected.

The pretender will throw himself into a fit at any time in public or otherwise and will take care not to injure himself, quite unlike the subject of real

epilepsy who often hurts himself severely in a fit.

CASE XVII.

R.B., aged 32, an ironworker by occupation was struck on the head by a bit of metal and a slight wound was received. Some time afterwards he complained that he was the subject of fits describing them as making him roll on the ground and foam at the mouth and tear things. He had no signs to show that he was the subject of epilepsy, no tongue scars or injuries, he had never suffered from nocturnal incontinence, there was not a typical history of epilepsy. His relations affirmed that he had these fits but his neighbours had never seen him having one. When after some time he saw that he was not believed he confessed that he had never had any fits, but had said he had as he thought he might get compensation.

## S U M M A R Y.

In the foregoing pages I have tried to show that a condition of neurosis may follow a shock or trauma resembling in its form certain neurotic conditions such as hysteria, neurasthenia, a form of insanity or hypochondria. Although the symptoms may not agree exactly with any one of these conditions, yet they resemble one or more of them sufficiently closely to be classed under such a heading. The resemblance of these conditions to organic disease has been described and their characteristics gone into, the means of distinguishing them from organic disease being fully entered into, and the peculiarity and indefiniteness of the conditions has been emphasised. It has been borne in mind throughout that the conditions described are those following trauma and not arising from other causes, so that symptoms not seen to arise after accident have not been dealt with by any means fully.

That such conditions do follow accident is well recognised and their relation to Medico-legal work of late years has often been found to present many difficulties. There is so much likelihood of their being mistaken for permanent organic disease or malingering that a diagnosis and prognosis of such a condition is very often a matter of great difficulty. I have attempted to detail the symptoms as found, reasons being given for them where possible, and a prognosis has been given or the means of forming a prognosis pointed out.

Many organic changes may follow trauma but these have only been considered in so far as they are likely to be mistaken for one of the neuroses described.

The Workmen's Compensation Act has been discussed and its relation both to functional conditions following trauma, its advantages and disadvantages to workmen, and the nature of the medical work it is likely to bring practitioners have all been described. Malingering has been detailed and the chief "symptoms" of malingering and the signs by which they may be detected have all been discussed.

To sum up finally:-

1. Functional conditions are found to follow trauma either severe or otherwise.
2. These functional conditions take the form of certain nervous diseases.
3. They are found to occur in both sexes.
4. The symptoms of post traumatic functional conditions are vague and irregular, resembling in many respects definite nervous diseases, but recognised by their vagueness and want of pathological changes (so far as is known) as being purely functional conditions.
5. They resemble organic nervous diseases but can be distinctly differentiated from them.
6. These functional conditions are often put forward by claimants for damages as arising directly from trauma when they are due to some quite independent cause.
7. Difficulty is often found in distinguishing them



from simulated conditions.

8. These functional conditions seem to be much more common since the introduction of the Workmen's Compensation Act; their duration is longer and simulation is more frequently found.
9. They are psychic in origin and may follow immediately after the accident, or their development may be slow.